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ABSTRACT

This manual is a beginning guide to program evaluation. Designed for program evaluators who have little or no previous experience in manipulating data, this guide is designed to demonstrate how to evaluate different aspects of a vocational rehabilitation program--and use those findings for program improvement. The use of averages, percentages, and computers is discussed in relation to vocational rehabilitation data classifications. A separate section on the reporting of program evaluation results is also included in this practical guide. (SJL)

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PROGRAM EVALUATION

'A Beginning Statement'

STUDY GUIDE

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RESEARCH AND TRAINING CENTER

INSTITUTE, WEST VIRGINIA 25112

PROGRAM EVALUATION: A BEGINNING STATEMENT

STUDY GUIDE

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PREFACE

"Program Evaluation: A Beginning Statement" was the product of a prime study group's consideration of program evaluation (Tenth Institute on Rehabilitation Services – 1972).

As a result of that publication, the West Virginia Research and Training Center was requested to prepare a beginning guide to program evaluation.

This publication is that guide and is designed for program evaluators who have little or no previous experience in manipulating data. If you fall into this category, we hope the document will bridge the gap and be a beginning for you. Later, you may want to build your skills in the area of statistical concepts; but for now you have a more basic job –– that of learning how to start evaluating programs. We hope this document helps.

If you are somewhat skilled in program evaluation, we hope you find something useful here.

If you are a skilled evaluator, put this document on your shelf or give it away. If you dare to read it, remember that not everyone is knowledgeable in the area of sophisticated PE (Program Evaluation) techniques and they have to begin somewhere.

This publication was supported in part by Research and Training Center Grant RT-15 from the Social and Rehabilitation Service, Department of Health, Education and Welfare, Washington, D. C., to West Virginia University and the West Virginia Division of Vocational Rehabilitation. The material may be quoted or reprinted without formality other than the customary acknowledgement of the R and T Center.

CHAPTER 1

INTRODUCTION

Does the term "Program Evaluation (PE)" scare you? Did you know that PE techniques range in complexity from the very simple to the very sophisticated?

Unfortunately, most people associate PE with the highly technical methodology of researchers involving such things as control groups, independent and dependent variables, longitudinal studies, and various sampling techniques.

Many kinds of PE are not complicated and require little or no background in research methodology. Other types of PE require only that the evaluator understand the concepts involved and know where to go to find assistance.

The idea that PE has to be difficult to be good is wrong. For example, some relatively simple work with averages or percentages using available data can provide a wealth of information. This is the least complicated type of PE. In addition, a basic understanding of the uses of a few statistical techniques can extend the range of types of PE that you can do.

This guide is designed to show you how to evaluate different aspects of a VR program -- and use those findings for program improvement. The approach is based on common sense, the procedures are simple, and when reference is made to a statistical concept, it is explained in common sense terms rather than being overly technical.

After you have used some of these basic kinds of PE, you will be ready to consider more involved techniques. But for now, we'll stick to the easier kinds of PE, and show how you can evaluate using currently existing data.

CHAPTER 2

GETTING READY FOR PROGRAM EVALUATION

Before we get into the "nitty gritty" of program evaluation (PE), let's take a walk through the system we want to evaluate.

STEP 1:

What is the total process that a client might go through in a vocational rehabilitation program?

Figure 1 shows that process. As you will note, each step is coded with status numbers currently in use by VR agencies.

Does the process look familiar? Of course! We have included this just to help you see the process on paper. The coded numbers and titles represent the entry point of a client, the kinds of services which may be provided, and the client's possible exit points. These different steps provide a basis for beginning your PE program.

STEP 2:

Where can you get data related to the system?

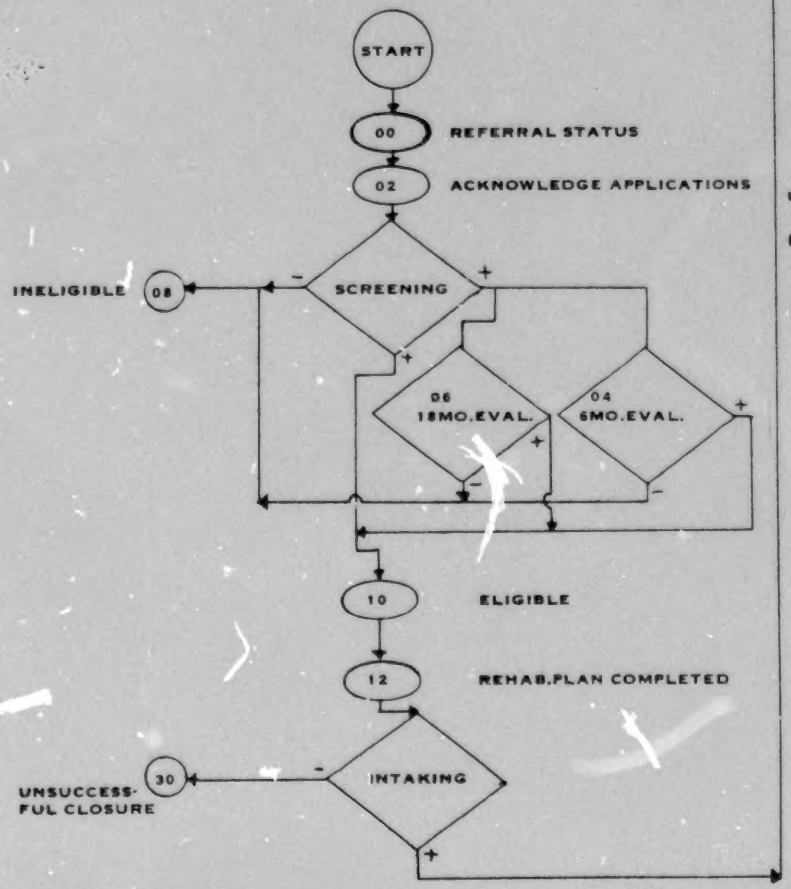
The simplest place is the SRS-RSA-300 (R-300) form (see Figure 2). It – or its equivalent – is completed on all VR clients.

STEP 3:

Get a copy of Chapter 13 of the VR Manual referred to on the back of the R-300 since it explains how some of the information is to be placed on the form.

If you have studied the system, reviewed the R-300 or its equivalent, and have Chapter 13 of the VR Manual, you have the basics to start program evaluation. Sound easy? It is! We'll show you what we mean in our next chapter.

FLOW DIAGRAM OF CLIENTS IN VR PROGRAM



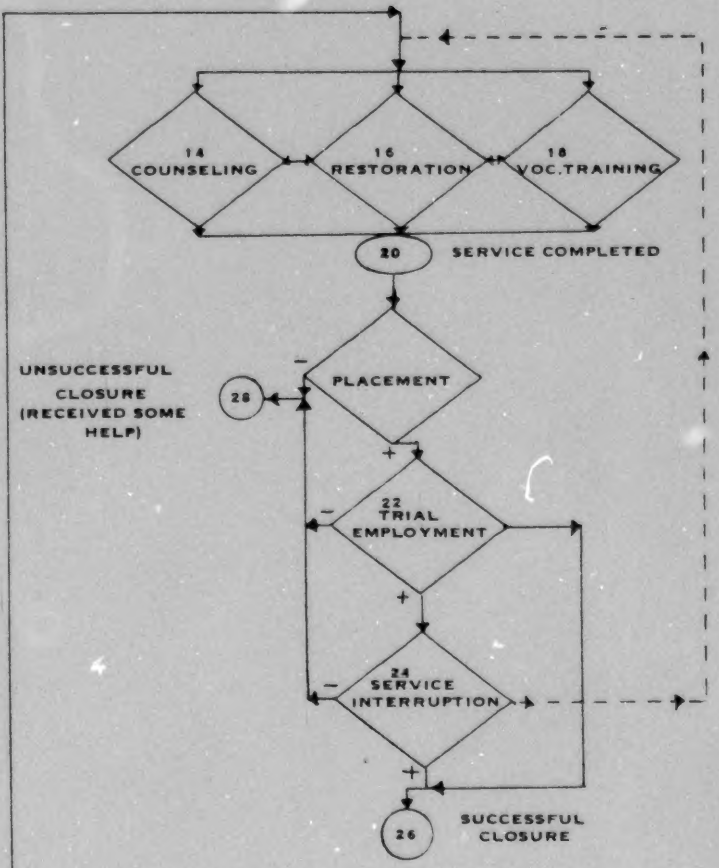


FIGURE 1

Form RSA-300
Revised 7-6

Agency Code 48

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
National Center for Social Statistics
Washington, D.C. 20201

Form Approved
Budget Bureau
No. 83-R0040

Case Service Report: Federal-State Program of Vocational Rehabilitation

PART 1 (TO BE RECORDED AT TIME OF FIRST REFERRAL)

A. Last Name | First Name | Initial

B. Address: Street and Number

City | County | Code* | Zip Code

C. Referral Date _____ D. Referral Source _____*

E. Age _____ DOB _____ F. Sex: 1 ☐ Male; 2 ☐ Female

G. Disability as Reported (describe)

Code _____*

PART 2 (TO BE RECORDED AT COMPLETION OF REFERRAL PROCESS)

A. Soc. Sec. Nr. _____

B. SSDI Status at Referral _____*

C. Race _____*

D. Date Referral Process Completed _____

E. Months in Statuses 00-02 _____

F. Spanish Surname—Yes ☐ 1; No ☐ 2

G. Outcome of Referral Process:

NOT ACCEPTED: Reason _____*

1 ☐ from (00); 2 ☐ from (02)

Client Referred to _____*

OR

Referral Not Appropriate ☐ 00

If closed from Status 00, complete items 3A through 3C. If closed from Status 02, complete items 2H through 2R and items 3A through 3C.

G. Outcome of Referral Process (cont'd.)

ACCEPTED FOR: 03 ☐ —6-mo. Ext. Eval. (04)
04 ☐ —18-mo. Ext. Eval. (06)
05 ☐ —— VR Services (10)

Complete items 2H through 2R. DO NOT COMPLETE ANY OF PART 3 AT THIS TIME.

H. Disabling Condition (describe):

1. Major

Code _____*

2. Secondary

Code _____*

I. Previous Closure within 36 Months:

No ☐ 1; Yes—Outcome: Rehab. ☐ 2
Not Rehab. ☐ 3

If Yes, Months Since Last Closure _____

J. Marital Status _____*

K. Number of Dependents _____

L. Total Number in Family _____

M. Highest Grade Completed _____

N. Work Status _____*

O. Weekly Earnings $ _____

P. Total Monthly Family Income (Including Earnings) _____*

Q. Public Assistance: Type _____*; Mo. Amt. $ _____; Time on PA _____*

R. Primary Source of Support _____*

PART 3 (TO BE RECORDED AT TIME OF CLOSURE)

A. Federal Special Program Identification:*

None	TF	AFR	MMS	MAW	PO	WIN				SUM
000	001	002	004	010	020	040	100	200	400	

B. Cost of Case Services (Dollars)

1. All Services—Total
2. Rehabilitation Facilities—Total
3. Social Security Trust Funds—Total
4. Extended Evaluation—Total

C. Social Security Trust Fund Cases ONLY:

1. Social Security Claim Type _____*

If Claim Type Code 2, 3, or 4, enter Wage Earner's:

Last Name | First Name | Initial

Social Security Number

2. Check (x) if Administrative† Costs Only ☐

D. Date Ext. Eval. Completed (if applicable) _____

E. SSDI Status at Time of Closure _____*

F. Work Status _____*

G. Weekly Earnings $ _____

H. Public Assistance: Type _____*; Mo. Amt. $ _____

I. Occupation (title) _____

Code _____*

J. Number of Months on Agency Rolls:

1. In Extended Evaluation (Status 04 or 06) _____
2. From Acceptance to Closure (Statuses 10-24) _____
3. In Training (Status 18) _____
4. Ready for or in Employment (Status 20 or 22) _____

K. Outcome of Extended Evaluation or VR Services

1 ☐ Closed from Ext. Eval. (Status 08): Reason _____*
2 ☐ Closed Rehabilitated (Status 26)
3 ☐ Closed Not Rehabilitated (Status 28): Reason _____*
4 ☐ Closed Not Rehabilitated (Status 30): Reason _____

L. Services Provided: Indicate (x) if applicable

Type of Service Provided or Arranged for by Agency		With Cost Only (1)	Without Cost Only (2)	With & Without Cost (3)
10	Diagnostic and Evaluation			
11	Restoration (Phys. or Mental)			
12	TRAINING: College or University			
13	TRAINING: Other Academic (Elem./HS)			
14	TRAINING: Business School or College			
15	TRAINING: Vocational School			
16	TRAINING: On-the-Job			
17	TRAINING: Personal and Voc. Adjustment			
18	TRAINING: Miscellaneous			
19	Maintenance			
20	Other Services			
21	Services to Other Family Members			

M. State Agency Special Program Identification*

None	MPU	MHC	WVC							SUM
000	001	002	004	010	020	040	100	200	400	

Employer's Name and Address/Date Started Employment. Complete when: ● Closed 08 (except from 00), 28, or 30 AND 2-B or 3-E is code 1 AND 3-F is code 1, 2, 3, or 4. ● Closed 26 AND 2-B or 3-E is code 1, 2, or 3 AND 3-F is code 1, 2, 3, or 4.

*These items are to be coded. †Includes counseling, guidance, and placement.

STATE AGENCY COPY
(PAGE 4)

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Date of Report | Counselor's Signature | Code

CHAPTER 3

TACKLING A PROGRAM EVALUATION PROBLEM: USING AVERAGES

PE is a tool which can help you strengthen your existing VR program. This, in turn, can tell you and others how well the program is functioning.

When you have properly evaluated one single aspect of the VR program, you will have information to either:

1. improve the program aspect, or
2. account for the present practice.

Either finding is highly acceptable. But – finding the answer requires that you state the problem and objectives clearly and accurately. You have to look at the question raised and:

1. Define the problem. This can mean taking a vague criticism and pinning down the real issue involved. Example: The State VR Director says clients stay in 00-02 statuses (referral-applicant) too long. Why does he think that? Let's assume that Agency X complained to him that a client remained in statuses 00-02 for six months and that it generally takes a long time before his clients are accepted or rejected by VR. Now you know the basis for the concern and can accurately define the problem. This will help you decide your course of action and set the tone for your evaluation procedures.

2. Look at the different ways the problem might be answered. Can you use currently available data? Is the problem related to a county and/or district, or does it have state-wide implications? How can the problem be broken down into manageable segments?

3. Decide on a systematic course of action. List the appropriate steps in a sequential manner. Know what you want to do, when you want to do it, and how it will be done.

4. Gather appropriate information. Remember that the accuracy with which you collect your data will determine the accuracy of your results. If you can't get all the data you need, be sure you know how this limits the interpretation of your results.

But don't let this stop you.

5. Analyze the data and write the report. Make your report concise, and include appropriate data in a way that is readily understandable by others.

6. Make recommendations, based on your findings.

7. Follow up to see the results in terms of program change.

Does this sound familiar? It's the old decision-making process applied to PE. To show you how it works, let's take a problem and follow through on what you might do. Remember that this is only one approach to the problem and is presented to serve as an example. After you have gone through the procedure you might like to think through how you would have approached the problem in a different way.

STATE DIRECTOR: I think we are keeping clients in statuses 00-02 too long. Find out what the situation is and let me know.

PROGRAM EVALUATOR: What seems to be the problem?

STATE DIRECTOR: At the Lions Club luncheon yesterday, Mr. Smith -- the director over at Agency X -- cornered me with this story about one of his referrals to VR that took six months before any action was taken on the application. He says that's not unusual, and he asked me what kind of a show we were running. I want to know what's going on!

PROGRAM EVALUATOR: Where is this guy from?

STATE DIRECTOR: He's over in Norris County.

PROGRAM EVALUATOR: I'll see what I can find out and let you know.

So let's look at the task facing the program evaluator.

PROBLEM: To determine the length of time involved in processing referrals through statuses 00-02 and to look at this time in relation to referrals from all agencies, particularly Agency X.

PROBLEM CONSIDERATIONS:

1. Agency X's director is wrong. His referrals don't really take longer, and he just picked out an exception.

2. Agency X's director is right. His referrals take longer to process.

3. Length of time for Agency X's referrals may be related to state-wide considerations, or may be a local problem.

4. If Agency X's referrals generally take longer, why? Could it be, for example, that length of time in statuses 00-02 is related to the disability type of their referrals?

WHAT DO WE NEED TO KNOW?

1. How long does it take clients, on the average, to go through 00-02 statuses?

2. Does the time vary for different referral sources regarding how long it takes clients to go through 00-02?

3. Does the time vary in counties (offices, etc.) for clients to pass through 00-02? How does Agency X compare?

4. How long does it take to process different disability categories through 00-02?

SOLUTION: We know that clients pass from 00-02 to screening, and perhaps evaluation, to either acceptance or rejection (See Figure 1). A good indication of how long clients generally spend in 00-02 would be the average time of all clients in those statuses.

Where do we get this information? Let's look at the currently available data on the R-300. Look at part 2, section E of the R-300 for the data on each client which shows months in 00-02. A simple tabulation of this figure (making sure all data is in months and fractions thereof) can be done for each district and/or county and the state (See questions 1 and 3 above).

But, let's go one step further. Part 1, Section D of the R-300 contains a code for referral source (see question 2 above). Next, if we look at Part 2, Section H, we see type of disability; and Part 1, Section B yields us county data.

Now we know where our data is going to come from. Our next decision is how we are going to handle the information. If you have your data on computer cards or tapes you simply tell the programmer you want a breakdown as follows:

1. Average time spent in 00-02 for all clients for, say, the last reporting year. (This is the state average)

2. That average time broken down by:
   a. County (or district office)
   b. Referral source
   c. Disability category

But, for now, let's assume you have no programmer, are not knowledgeable in statistics and are left on your own to figure out the answer. You have 10,000 completed R-300's to process by yourself, possibly with the help of one or two clerks.

First, 10,000 forms represent a lot of paper. You have to decide whether you can do all of them, or whether you will have to take a representative sample. If you do not sample, you will have to process all 10,000 forms. If you do sample, the sampling must be correct or your results will be wrong.

Let's assume you want to take a sample – say 10% or 1,000 of the 10,000 R-300's is all you feel you should handle. You are now faced with the important decision of what 10% to use. If your sample is not representative, then your results will be questionable. But, how do you get the proper sample? Since sampling can be highly technical, and much depends on the kind of sample you want, the best solution is to ask for help.

You can go to your local university, Research and Training Center, or some other knowledgeable person and ask them to tell you which 1,000 of the 10,000 R-300's you should pick and if this is an adequate sample. Your authority will use a process for random selection and provide you with a list of numbers to use. The process is equivalent to putting all the forms in a hat, mixing them up, drawing one, noting its number (e.g. social security number), putting it back in the hat, mixing them up, and drawing a second number – and so on until 1,000 are drawn. That way, all forms have an equal chance of being selected. (You might end up using the same form twice.)

The reason you should ask someone which forms to use is when you don't know how to do a particular thing, ask for help.

Let's assume that you have decided which 10% of the forms (R-300) you will use – based on the advice of your statistician – and have arranged with your State Director to have access to these forms. This is your random sample.

You are now ready to accumulate your data. Because this is painstaking and time-consuming, you may want to make some decisions. For example, you might feel that the length of time in 00-02 is probably more directly related to county or district practices than to disability category. Thus, you would disregard disability category to cut down on the clerical effort. Admittedly, you may be wrong – but if you guess right, you can save consideraole time. This is your decision.

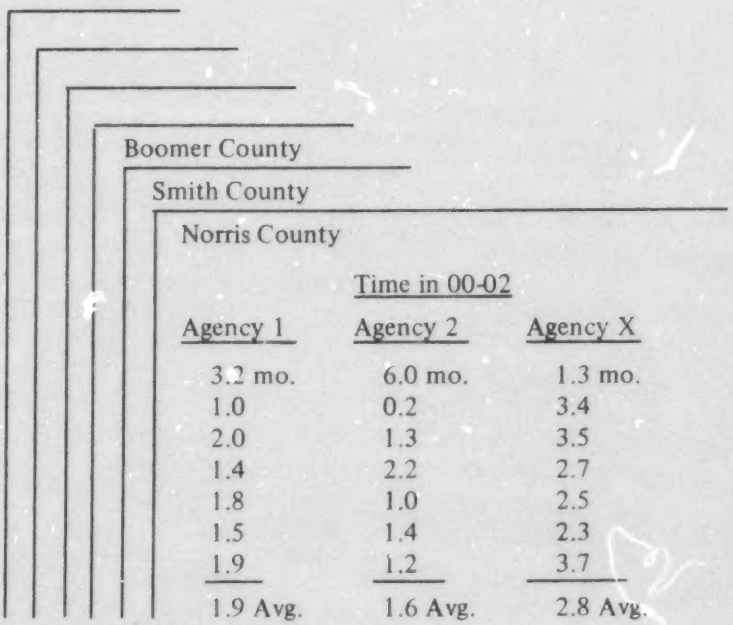
Assuming you are concentrating on county practices, proceed as follows:

1. Put county names on individual sheets of paper (See Table 1).

2. Subdivide each county into referring agencies. This is done because you want to see if the length of time is different for Agency X.

TABLE 1

a.



Boomer County
Smith County
Norris County

	Time in 00-02	
Agency 1	Agency 2	Agency X
3.2 mo.	6.0 mo.	1.3 mo.
1.0	0.2	3.4
2.0	1.3	3.5
1.4	2.2	2.7
1.8	1.0	2.5
1.5	1.4	2.3
1.9	1.2	3.7
1.9 Avg.	1.6 Avg.	2.8 Avg.

b. State Averages for each Agency

County	Agency 1	Agency 2	Agency X
Norris	1.9	1.6	2.8
Smith	1.2	1.9	2.3
Boomer	2.0	1.8	2.6
State Average	1.8	1.7	2.5

c. County Averages for all Agencies:

Agency	Boomer Co.	Smith Co.	Norris Co.
Agency 1	2.0	1.2	1.9
Agency 2	1.8	1.9	1.6
Agency X	2.6	2.3	2.0
County Average	2.3	1.6	2.0

d. State Average for Time in 00-02:

Boomer County --- 2.3
Smith County --- 1.6
Norris County --- 2.0

State Average ---2.0

3. Transfer information from the R-300 to your chart (months in statuses 00-02 by county and referring agency).

4. Compute your averages. You get an average by adding together all the months spent in statuses 00-02 and dividing that figure by the number of entries you made.

a. Compute average for each referring agency in each county (See Table 1-a).

b. Compute the state average for each agency (Table 1-b).

c. Compute average for each county by using the averages for all referring agencies in a particular county (Table 1-c).

d. Total up all counties and get average for state by dividing by number of counties (Table 1-d).

Now you have some figures for comparison. Since you are not using a computer and are working with averages, you'll have to "eye-ball" the averages to get an idea of what is happening.

Using our assumed figures from Table 1, we know that in Norris County, Agency 1 referrals take 1.9 months; Agency 2, 1.6 months, and Agency X, 2.8 months. In Table 1-c, we see that the average time for all referrals in Norris County is 2.0. From Table 1-b, we know that the average time for Agency X in all counties is 2.5 months. Table 1-d shows an overall state average of 2.0 months in Statuses 00-02 for all referrals.

The overall average time in 00-02 for the state is 2 months. This answers question 1 under "What Do We Need To Know?". Table 1-a and b show that referral agencies vary in time to process clients through 00-02. This answers question 2. Table 1-b and c answer question 3. We did not consider question 4.

In our example, Agency X's director was right. His referrals take 2.5 months on the average in the state, with a high 2.8 months in Norris County. We know this is higher than our state average of 2.0 months.

Our next step is to figure out why there is a difference for Agency X. Had our computations shown that Agency X was in line with other agencies on both a county and state basis, then we could have stopped here.

We previously decided not to concentrate on disability category as influencing the length of time in 00-02. Let's assume that we now feel disability category might influence time in statuses 00-02. (We could have chosen other factors such as age or education of clients, etc.) Our next step is to repeat our data collection process and analyze our data by disability category.

1. Make sheets for each referral agency (similar to Table 1).

2. Subdivide each agency into disability codes.

3. Transfer from R-300 time in 00-02 under appropriate disability code.

4. Compute average time for each disability code for each referring agency.

5. Compute percent of referrals by disability category for each agency. You can get this percentage by dividing the total number of R-300's for that agency into the total number in each disability category.

6. Find average time for each disability code for all referring agencies which will give you the state average for each disability code.

Let's make another assumption – that clients in disability category "Y" spend a longer time in 00-02 on a state-wide basis than clients with other disabilities (e.g., 2.7 months). Let's say we found that 70% of Agency X's referrals on a state-wide basis fall into this category "Y". Now we know why Agency X's referrals take longer. It's related to the fact that most of their referrals are in disability category Y, and that this category takes longer. We're dealing with state-wide figures so we know it is not related to county practices. We have identified a solution to our problem. Your report to the State Director might be something like:

1. Our average time of clients in 00-02 is 2 months.

2. When analyzed by county, there appears to be no differences in average time in 00-02 since counties vary from 1.6 to 2.3 months.

3. When we look at time in 00-02 by referral source, we find that Agency X referrals average 2.5 months state-wide with a high of 2.8 months in Norris County.

4. Further analysis shows that disability category Y takes an average of 2.7 months state-wide.

5. Disability category Y represents 70% of Agency X's referrals.

Therefore Agency X was right; his referrals take longer. This additional time appears to be due to disability category.

RECOMMENDATIONS:

1. Tell Agency X that his referrals do take longer on a state-wide basis and that it appears to be because of disability category of referrals.

2. We should look at disability category Y to see why it takes longer and whether this time can be shortened. Since it is a state-wide situation, we should look at our method of handling these cases.

Like we said at the beginning of this chapter, an answer frequently raises other questions. Now you have to find out why disability category "Y" takes longer. If there is a logical answer, then your State Director can also report this to Agency X. If not, you can look further. Investigate.

If you, or some other designated person, do investigate the situation and institute new procedures for handling disability category Y, you can check these procedures' effectiveness by looking at data at the end of six months or a year. If you get a significant drop in the average time for processing disability category Y through 00-02, YOU HAVE DOCUMENTED PROGRAM IMPROVEMENT.

You have also received other benefits. Now you can recommend to the State Director that he ask all supervisors to re-examine cases which stay in 00-02 longer than 2 months to see if there is a problem. If supervisors are able to cut down on the number of cases taking longer than 2 months in 00-02, then you are actually cutting down the state average from 2 months to a lower figure.

You can re-do your study using data from the next reporting period simply on client time in 00-02. If the average is less than 2 months, you've documented program improvement.

Now, let's assume you had given your problem to a programmer. He would give you much the same results; the only difference being he would provide you with more statistical data and you'd get it quicker.

Other things you could have turned up in our little exercise instead of our presumed solution could be:

1. The situation might have been related to county practices rather than to disability category. Maybe the office staff is new or understaffed, or there has been an extended illness – each possibility offers evidence for a proposed solution.

2. There were no differences and the Agency X Director was dead wrong.

In either case, your State Director has data to support an answer and can plan corrective actions.

Are you beginning to see the possibilities of what kinds of things you can investigate, using the R-300? One of the biggest problems in this kind of PE is clerical help to assist you in wading through the paper.

Our advice is to use the computer whenever possible, but if it's not available, pencil power can do the job. The more knowledge you have about statistical procedures, the more you can do and the stronger your findings will be. But the important thing is to do what you can.

Finally, let's look at some averages which you can compute from R-300's that might have evaluation potential. These are just to get you started thinking so you can devise your own combinations.

1. Profile of clients by state and by district. For example:

   a. Average age.
   b. Average education.
   c. Average income at referral and closure.
   d. Average time in statuses 00-02.
      Average time in statuses 00 through 06.
   e. Average time in statuses to 08.
      Average time in statuses to 26.
      Average time in statuses to 28.
      Average time in statuses to 30.
   f. Compare state and district profiles.

2. Number of clients in disability category by state and district. Convert to percentage of total clients per state and district and compare. You might find different districts have different types of caseloads. Why? Is it referral source, etc.?

3. Time to type of closure (08, 26, 28, 30) by disability.

   a. Do they vary?
   b. Compare district averages to state averages.
   c. Does one district have a higher percentage of 26 closures for certain disabilities? What does that district do that all districts might be doing?
   d. Are the percent of 26's for one disability higher than others? Why?

4. Average time to closure as 08, 26, 28, 30, by state and district for such things as:

a. age
b. education
c. referral source
d. any other characteristics or category you are interested in, e.g. disability.

If you never make it past Chapter 3 in this publication, you can still make a contribution to your VR program using the type of comparisons mentioned above.

In our next chapter, we'll look at more problems, but won't go into as much detail and we'll examine other techniques. We're still sticking with R-300 data though. So, don't get up tight.

PROBLEMS

1. Compute the average of the following numbers: 10, 12, 36, 24, 9, 18, 21, 13, 22, 41. (Answer: 20.6)

2. From the following information about 10 clients, compute the average time to closure by disability category and type of closure:

Client No.	Disability Code	Type of Closure	Time to Closure
1	520	08	14 months
2	640	26	12 months
3	532	28	23 months
4	119	26	3 months
5	510	28	9 months
6	614	26	10 months
7	146	08	5 months
8	630	30	3 months
9	330	26	17 months
10	131	26	7 months

A typical answer:

	Average Time To Closure	
Disability Code	Status 26	Statuses 08, 28, 30
100's	5.0	5.0
500's	17.0	15.3
600's	11.0	3.0
Total	11.0	7.7

CHAPTER 4

ANOTHER PROGRAM EVALUATION PROBLEM: USING PERCENTAGES

In the last chapter, we used averages to look at the time spent in statuses 00-02. Now let's tackle another problem using percentages to help find the answer.

A district supervisor becomes concerned when the number of 26 closures by one of his counselors far exceeds any other counselor in the district. Is Counselor Y really that much more productive than the others? Are the other counselors not working up to par? Is Counselor Y successful because he takes only the easy cases?

The district supervisor decides that the last question might hold the key to the problem. He wants to see if the old rehabilitation "teeth and glasses" syndrome is in operation. Here's how he can find out:

PROBLEM: To determine the disability categories of 26 closures by counselors in District A.

PROBLEM CONSIDERATIONS:

1. What is the total number of 26 closures for each disability category for counselors in District A?

2. Is Counselor Y's percentages of closures by disability category similar to the other counselors?

3. If Counselor Y has more teeth and glasses closures, why? Is his caseload different in some way?

4. Does District A have a higher percentage of teeth and glasses closures than other disabilities?

WHAT DO YOU NEED TO KNOW?

1. The percentage of clients closed in each disability category for the total district during the past reporting year (or last six months).

2. The percentage of clients closed in each disability category for each counselor.

SOLUTION: Teeth are included under the disability category of digestive disorders (660) and glasses under visual impairments other than blind (149). If you make a comparison of disability categories by using percentages for the district and for each counselor, we can see what the district percentage

is and which counselors have larger or smaller percentages. In addition, if the percentages in these two categories are higher than other disabilities, you might want to investigate further.

We go again to the R-300 to secure the information we need. Part 2, Section H gives the major and secondary disabling condition for each client. You must decide whether you want to look at the secondary as well as the major disability. To do so, of course, will be more work but it will also give you more information. With the district code, and the counselor name and code on each R-300, you have all the information you need to proceed.

1. Make a sheet for each counselor in the district.

2. Subdivide the sheets by disability categories. (You might want to add other pertinent information here such as time from referral to closure or case services expenditures.)

3. Make a hatch mark (tally) for each case under the appropriate disability for each counselor (see Table 2.).

TABLE 2

Counselor Z

Counselor Y

Counselor X

Blind	1
Other Visual Handicap	~~1111~~
Deaf	11
Orthopedic	~~1111~~ 1
Digestive	~~1111~~ 1111
Genito-urinary	111

4. Count the hatch marks to find the totals in each disability category for each counselor, and the total case closures for each counselor.

5. Compute the percentage each disability category represents in each counselor's caseload. (Total in disability category divided by total case closures).

6. Find the totals for each disability category for the district.

7. Compute the percentage each disability category represents in the total district caseload. (Total in disability category divided by total district closures.)

You can now place your percentages in a table like this:

TABLE 3

Disability	District A %	Counselor X %	Counselor Y %	Counselor Z %
Blind	1.9	2.9	1.1	1.0
Other Visual Impairments	10.0	10.6	17.4	5.7
Deaf	1.6	1.4	.8	1.1
Orthopedic	14.5	15.3	10.2	27.9
Digestive	22.0	24.4	31.2	13.1
Genito-Urinary	4.3	4.1	3.2	2.4

Now you can compare by disability categories. What do you see? From our hypothetical figures for District A, we learn that 10% of the closures fall into "other visual impairments" and 22% in digestive disorders; a total of 32% for both. Counselor X shows a total of 35%, Counselor Y 48.6% and Counselor Z 18.8% in these two categories. On the basis of this information, we can say that Counselor Y does indeed show a higher percentage in these categories which include teeth and glasses cases than other counselors in the District.

With this information in hand, you as district supervisor should try to find out why Counselor Y shows such a high percentage.

Could it be related to the way in which cases are assigned to individual counselors? Is it just an accident that he has so many of this particular type of case? Or, perhaps during this time period Counselor Y had a large number of long-term cases and the kinds of closures he has are different from the makeup of his total caseload. A quick case review can pick these things up.

We also raised a question about District A's percentage of closures in teeth and glasses cases. The figures show that disability categories containing these cases make up 32% of the closures. This seems to be a high percentage, so further investigation is needed here also.

You might want to compare these percentages with other districts in the state to see if they are different from District A. Or you might want to compare the percentages with the actual incidence of disabling conditions in the general population. These figures are available in Census data.

What is important is that you investigate, seek new information when needed, and do all you can to get a true picture of what is happening. Then you can institute new procedures and programs to bring about change. A re-checking of closures six months later will tell you if you have been successful in improving your program.

You have now successfully provided data to cope with the problem you identified. But if you go back to Table 3, you will discover that you have found more than just the data to permit you to answer your question.

Look at the percentages for Counselor Z. He has a small percentage of disability categories which include teeth and glasses closures, but look at the orthopedic cases. His closures for this disability are twice that for the total district. Does he prefer to work with these cases? Does he have a particular skill that makes him successful with persons with orthopedic disabilities? Just think of the possibilities for program improvement in terms of case assignment and counselor training, if either of the above is true.

At this point you might decide to go back to the R-300's and look at disability categories and time clients spend on agency rolls for each counselor. And, while you are doing that, you might want to include case services expenditures. Are you beginning to get the idea? A little thought and planning and the possibilities for meaningful PE are endless – and almost painless.

O. K., Mr. Counselor, we have been ignoring you. But you, too, can use PE to see how well you are doing. Why wait for the district supervisor to get on your back to get this information? Check on yourself by using the procedures outlined above. You may learn some interesting things about yourself and the clients you serve!

PROBLEMS

1. Compute percentage of total number of clients in each disability category:

Disability Code	Number of Clients
149	21
399	5
500	12
660	17
530	10
670	15

(Answer: 149 – 26.2%; 399 – 6.2%; 500 – 15.0%; 660 – 21.2%; 530 – 12.5%; 670 – 18.8%)

2. From the following information about 10 clients, compute the percentage of type of closure by age and education:

Client No.	Age	Yrs. of Education	Type of Closure
1	22	10	26
2	39	12	08
3	49	6	28
4	19	10	28
5	27	12	26
6	59	9	26
7	24	8	30
8	18	7	08
9	33	13	26
10	41	11	26

A Possible Solution:

	Percentage of Clients	
Age and Education	Status 26	Status 08, 28, 30
Less than High School Grad.		
Under 30 years	20	60
30 years and over	40	20
High School Grad. and Over		
Under 30 years	20	–
30 years and over	20	20
	100	100

CHAPTER 5

USING THE COMPUTER

There is a common belief that anyone who uses the computer has either a degree in statistics or special courses in programming.

Not so!

Anyone can make use of the computer – if he has access to a computer programmer. If you are tired of paper and pencil computations and want to save time, let's jump into the world of computers. You can get quick results on your averages and/or percentage evaluations, or you can expand your efforts.

The most important element in beginning to use the computer is to establish a relationship with your programmer. For the most part, the studies you can do need only be limited by the ability of the two of you to communicate effectively. This does not mean that you have to "speak his language"; rather, it means you must be able to clearly communicate to him just what you want the computer to do. Define your problem carefully and write down exactly what you want.

Example:

PROBLEM:

To determine the amount of case service money spent by type of disability.

NEED:

1. The various disability categories as shown (in code) on the R-300 form, Part 2, Section H.
2. The average cost of all types of case service costs as shown on R-300, Part 3, Section B.

Your programmer will show you how to code your data so that it can be punched on computer cards. (We'll go through an example later.) If you currently have R-300 data on computer cards, discs, or tapes, you don't have a problem. However, there may be cases where the data have been recorded in a manner which is not readily usable for your particular type of evaluation project. In that case, the programmer may be able to reprogram the data so it can be used. If such a rearrangement is not possible, you will have to provide him with the original R-300 data.

After he has placed the data on cards and has provided you with a computer print-out of the requested analysis, ask him to explain the print-out to you. We will provide you with some examples, but the format for print-outs varies so you should discuss the computer output with him. Ask him direct questions and make notes directly on the print-out.

We are now going to cover a PE problem the "easy" way and then look at some of the possibilities of expanding your PE effort using more sophisticated statistical techniques. We will try to explain the purpose and uses of these techniques and won't refer to the way in which they are derived because your computer will do that for you. It is possible to work with your programmer if you know what you want and if you are willing to work with him to understand the results.

PROBLEM: The State Director wants to know the average time to closure (status 26) for the various counties/districts in the state. He then would like to compare this average to the state and national average. (We will assume the national average to be 15 months.)

SOLUTION 1: (Paper and pencil method)

1. Get all the R-300's closed as 26, as shown in Part 3, Section K.2, for a reporting period; e.g., a year. (You can do this by sampling if you wish, as we did in Chapter 3.)

2. List each county/district on a sheet of paper (R-300, Part 1, Section B). Post time to closure for all cases under appropriate county, using the totals of:

   a. Months in statuses 00-02 (Part 2, Section E of R-300).

   b. Number of months on agency rolls (Part 3, Section J, 1-2).

   Note: You may or may not want to use (a) above, but if you don't, you should state that in your summary of results.

3. Compute the average for each county.

4. Add up all the county totals and divide by the total number of cases to get the state average.

You now have the information for your comparison – average time to closure (status 26) by (1) county and (2) total state.

What we have done so far is a repeat of what was done in Chapter 3. Let's now take a look at how this same problem can be handled on the computer.

SOLUTION 2: (Expanded solution)

1. Consult with your programmer. First, discuss with him the data you need and the comparisons that must be made. He can provide you with spread sheets (See Illustration 1) with 80 columns on it. These columns correspond to the 80 columns on a computer card. More than likely, he'll ask you to put the county code in three columns since the county code is a 3-digit number. Just to identify the R-300 forms used, you will also place the social security number in the appropriate number of columns – 9. Then, he'll ask you to put the total number of months to closure in three other columns; e.g., 020 for 2 months, 025 for 2.5 months, 103 for 10.3 months and so on.

Note: If you have decided you want additional comparisons such as a breakdown by disability category, you will have to add that information on the spread sheet at this time.

2. Tell your programmer that you would like to have the average time to closure for each disability category by county and by state. (This is exactly what you would have done by pencil and paper.)

3. Tell your programmer that you would like to find out if any of these county averages for the various disability categories are far enough above or below the total state average for that disability category to show that the two averages are statistically different from each other. In other words, is the average for a particular disability category in county/district statistically different from the state average?

4. Your programmer will take your sheets, have them punched on cards, and conduct the analyses for you. You will get back a series of computer print-outs. Ask the programmer to go over these print-outs carefully with you, showing you where your answer to each question is.

We would like now to give you some background to help you when you talk with the programmer.

The programmer will tell the computer to add up the totals by disability category for each county and get the average. He will then tell the computer to add up the totals of all counties for each disability category and get the state average for that category – just what we did in Solution 1.

Then, the programmer will tell the computer to compare the disability category average for each county with the total state average for that disability category to see if it is statistically different.

Project _____ Date _____ Name _____ Page _____

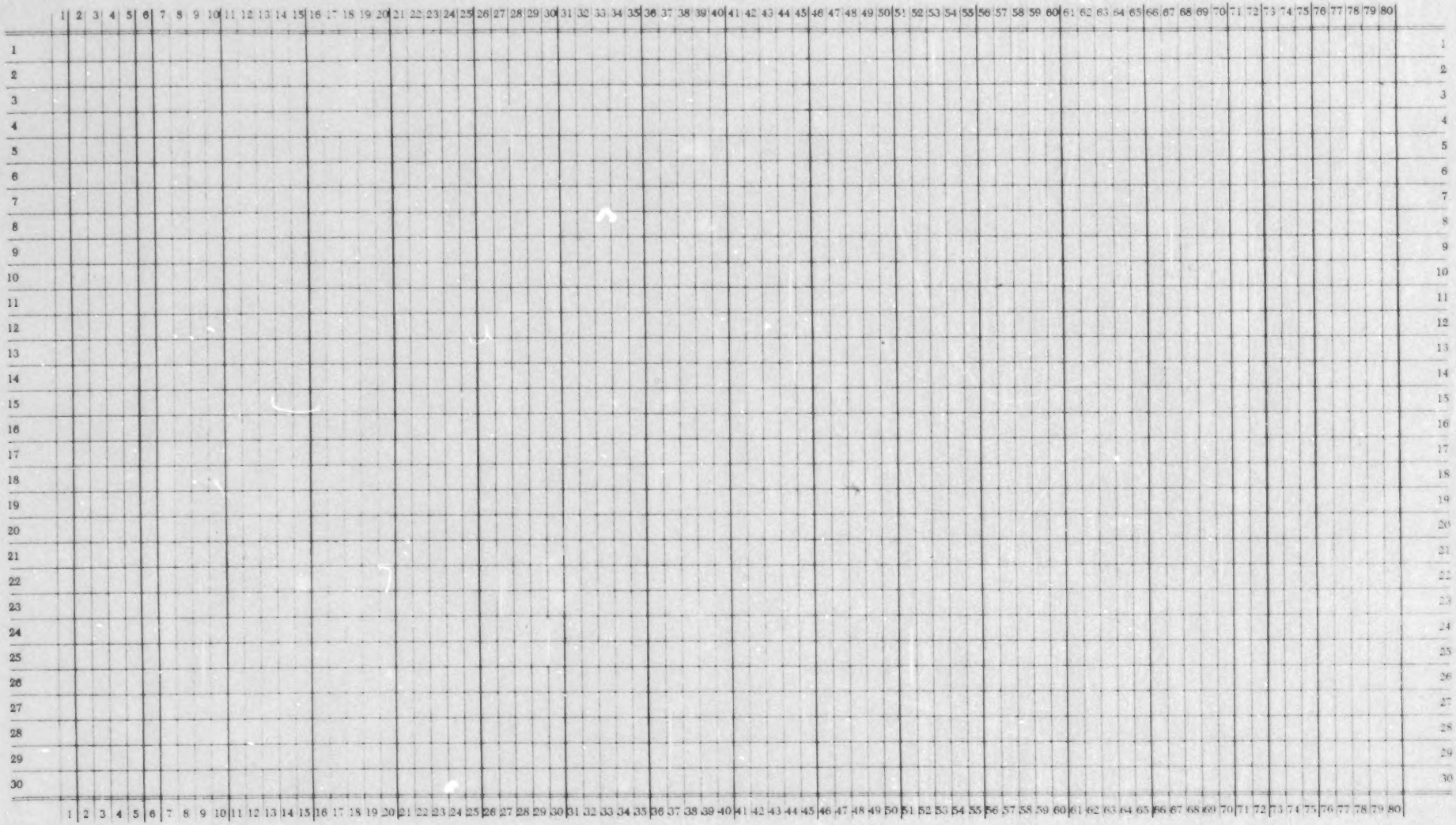


ILLUSTRATION 1

He may use what is called a "t-test" which will individually compare each county average with the state average, one at a time. In this case, you will get a print-out for each county with a "t" value and a "probability level" (See Illustration 2).

Then again, he may tell the computer to compare all means at once, using a technique called "Analysis of Variance" which permits the computer to consider two or more groups (in this case, all counties and the state) at the same time. This print-out is harder to read.

It will give you an "F" value (named after Fisher who figured out how to do it) and a "probability level" plus some other comparisons. These comparisons are really what you are interested in, for they will be the ones that compare county/district averages to state averages. (See Illustration 3)

Now let's take a look at an explanation of what you see on Illustrations 2 and 3.

First, the only thing you really need to know about "F" and "t" is that the larger the number is, the more likely you are to have a difference among or between your averages. If you look in Illustration 2, for example, you see t = 1.056, and the probability level is .293. It's the probability level that you'll be most concerned with.

Now when you look at your computer print-out, the probability level will tell you exactly how many chances in 100 you have of having a difference between two averages. For purposes of your evaluations, we suggest you set a probability level of .05, which means you should have only 5 chances in 100 of being wrong. You, therefore, can be 95 percent sure that your averages are different.

Let's look at an example. In Illustration 2, you will note that this probability level has been calculated by the computer to be .293, meaning you would have more of a chance of being wrong than 5 in 100. We now know that the averages are not statistically different. So, when you look at probability levels, any number that is less than .05 (like .0499, .0320, .0268, etc.) lets us know that we have significance above our .05 level and there is a difference between averages. On the other hand, numbers that read .0501, .0629, .2930, .3645, etc., are all non-significant; meaning that there is more than a 5% chance that the averages are not really different. Therefore there is no difference between the averages.

Probability levels are treated the same for all tests -- both F and t's. However, the F comparisons get more involved because of the different ways the programmer can compare individual county/district averages to the state average. After the F comparison he may use t tests or other means of comparisons. You should get him to circle the significant comparisons on the print-out and label them for you.

TIME IN STATUS 02 19.45.22

BASIC STATISTICS AND T-TESTS, GROUPED BY TIME

VARIABLE DESCRIPTION	NAME	MEAN	SD	N	VARIANCE
MONTHS IN 02	ACTION	1.092	1.392	152	1.938
GROUP 1	YES	1.173	1.444	104	2.086
GROUP 2	NO	0.917	1.269	48	1.610

	DIFFERENCE	SE	DF	T-TEST	SIGNIFICANCE
GROUP 1 VS GROUP 2	0.256	0.243	150	1.056	.293

VARIABLE DESCRIPTION	NAME	MEAN	SD	N	VARIANCE
DISABILITY TYPE		2.869	1.028	145*	1.056
GROUP 1	YES	2.897	1.076	97*	1.159
GROUP 2	NO	2.812	0.930	48	0.865

	DIFFERENCE	SE	DF	T-TEST	SIGNIFICANCE
GROUP 1 VS GROUP 2	0.084	0.132	143	0.464	OVER .500

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ILLUSTRATION 2

ANALYSIS OF VARIANCE FOR VARIABLE MONTHS MEAN 2.26000000 C.V. 125.057071 %

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE
GROUP	1	2.200128	2.20012821
RESIDUAL	48	383.419872	7.98791400
CORRECTED TOTAL	49	385.620000	7.86979592

TESTS	SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	PROB > F
NUMERATOR:	GROUP	1	2.200128	2.20012821	0.27543	0.6084
DENOMINATOR:	RESIDUAL	48	383.419872	7.98791400		

ILLUSTRATION 3

Take notes and write his explanations right on the print-out for future reference. For example, if he says the county/district coded as 034 is significantly different from the state average for disability category "X", circle that result (since you coded the county/district, you know that the number 034 represents a particular county/district, say Norris County).

Now, let's look at some of the things you might do with your comparisons. Say Norris County's average time to closure is higher on a particular disability category than the state. You might want to recommend case review to find out why Norris County takes longer to close in status 26. On the other hand, Boomer County might take significantly less time, in which case it might be worthwhile to see what Boomer County is doing that might be applicable across the state. See Table 4 for a comparison of three hypothetical counties. What we have done here is make a three-column table. We have listed our counties with their averages for disability category X. We have placed our t-values in the last column and have noted,with an asterisk, those that were significantly different at the .05 level or better. Also, we have noted at the bottom of the table just what level we have chosen.

You will note that Boomer takes significantly less time to closure than our state average, while Norris takes significantly longer. However, Smith county varied, but not sufficiently to be significant (13.3 was close enough to 14 to be regarded as being the same). It might appear on the surface that eyeballing is as good as using the probability level method. However, the computer considers such things as number of cases you are looking at. Fifteen might be different from 14 for one disability category, but not different for another, depending on just how the length of time varies and how many people are in that disability category.

There is almost no end to the amount of data you can put in a computer and the ways it can be compared. Can you see categories on the R-300 that you would like to see compared for county/district: education? case service money spent? disability, etc.?

All of these comparisons can be done for you, following the procedures we outlined above. If your computer programmer differs with our recommendations, follow his advice, for computers and computer programmers differ, and he will know what programs to use and the limits of those programs.

TABLE 4

Averages of Selected Counties: Time to 26 Closure by Disability

Category X

County	Average	t-value
Norris	15.2*	2.086*
Smith	13.3	1.942
Boomer	5.0*	13.845*
_____		
_____		

*significant at .05 level
State Average = 14 months

WHAT HAVE WE LEARNED IN THIS CHAPTER?

1. That two groups can be compared for differences using the t-test, and that two or more groups can be compared using Analysis of Variance.

2. That differences show up in the form of the probability that the differences are significant.

3. That significance is determined by the probability level which you choose, usually the .05 level.

4. That data not on cards or tapes are placed on spread sheets in a particular format so they can be punched for the computer.

5. That your best friend is your programmer when you use a computer.

We do not expect that you will have grasped all of the concepts in this chapter. However, after you have worked in PE for a while, more of these techniques will become clear. We have presented these concepts just in case you have a little background in statistics or math. If you got the general idea, great. Perhaps an explanation from your programmer or other knowledgeable person will help clarify things further.

CHAPTER 6

REPORTING

Let's say you now have a completed PE report, analyzing some part of your program. What do you do now?

We're suggesting that a large part of your job still lies ahead. A PE report will never accomplish anything unless it is used, unless it gets heard in the places where decisions are made in your agency. If action is not taken in terms of program improvement, then why have done PE in the first place!

One way to make sure that your work will get appropriate attention is to have a conference with the State Director and get clear understanding as to the types of data he thinks are needed for the agency. There is a lot of research that indicates that when information meets a felt need, it is more readily utilized and acted upon.

Another suggestion we have regarding your reports is that there should be some formal procedure for seeing that the reports get proper review and are given serious consideration.

One such procedure is offered for your consideration. It might go something like this:

The results of an evaluation should be presented in a written report that clearly states its conclusions, and data upon which the conclusions were based. Recommendations should be included where indicated.

The initial report would be sent to the agency administrator or his designee. Copies of the report would then leave the evaluator's desk earmarked for review by agency personnel directly responsible for the program aspect under evaluation. A written response should be expected from program personnel within a reasonable or designated time period.

The program personnel should respond to the report and would have an obligation to make recommendations relative to the need for changes and additions within the program. This response should be sent to the administrator's office for policy and administrative consideration.

Perhaps the most important part of this procedure is the responsibility now facing the office of the agency administrators.

It is the responsibility of the program evaluator to make the state agency director fully aware of the program evaluation findings. The director's response to the findings of an evaluation report could be the single most important factor in its implementation.

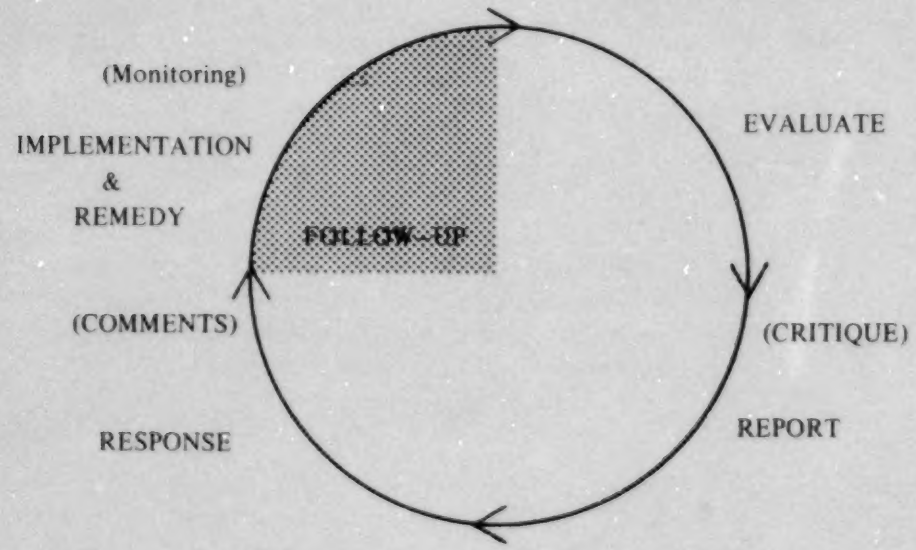
Once a program administrator has made some decision in response to the findings of program evaluation, there is still a need to monitor the implementation of that decision. Too often decisions are made but the follow-through on implementation is inadequate.

The responsibility for monitoring should be explicitly assigned by the agency director along with the requirement for a report back to his office within a set time period.

Schematically, a procedure such as the one elaborated above would look like this:

EVALUATION

AGENCY AND ADMINISTRATION CYCLE



Why don't you see if you can get some understanding as to what would be an appropriate procedure and probably more important, what would be an acceptable one. Then go ahead and start your evaluations confident at least that they'll be given some consideration.

In the rest of this chapter, we'll offer some reports you might do as part of your routine operation.

ANNUALLY

1. Profile of clients closed as 26's, compared by state and district, with any variations on such items as:

   a. Average age
   b. Average education
   c. Average income prior to VR services
   d. Average income after closure
   e. Percent of caseload by disability category
   f. Percent of caseload by referring agency
   g. Average time to closure
   h. Any other items you wish to consider, like percent of caseload by sex, etc.

2. Same profile as in Number 1 for 28's and 30's by state and district.

3. Profile of clients by disability category exiting at status 08, their sex, age, referral source, etc. Do they differ from statuses 26, 28 and 30 on some characteristics?

4. Case service expenditures by disability category, by state and district.

5. Case service expenditures by months to closure (26, 28, 30 and 08, if applicable) by state and district.

6. Average months in statuses 04 and 06 by type of closure and/or disability category) by state and district.

7. Average months in statuses 10-24 or its sub-statuses by type of closure and/or disability category, by state and district.

8. Similar reports as shown in 1-7 for Federal special programs.

9. Time in statuses 00-02 by disability, state and district.

10. Number of clients closed who had been previously rehabilitated by disability, district and state.

11. Number of closures, 08, 26, 28 and 30 compared to number of cases accepted for VR services and how we compare to national or state figures.

12. Any other aspects of your program you feel would be valuable to look at.

QUARTERLY

1. Do any of the above every three (3) months to get quarterly comparisons (gets at fluctuations throughout the year).

2. Case service expenditures by quarter by district to see if funds are being budgeted properly.

MONTHLY

1. Case movement – how many clients move among the various statuses. Make graphs for each month for each status. See how they vary. This may help smooth out case flow problems by providing data on case movement and then you could compare districts to the state average.

Before we close, we'd like to stress two things.

First, be aware that many aspects of a rehabilitation program are "special" in that they serve unique kinds of clients.

Findings, for example, from a study of a penitentiary unit, mental hospital or an alcoholism rehabilitation unit will necessarily be quite different than data gathered from the general field program which delivers diverse services to varied target populations. So watch out for differences that on the surface seem meaningful, yet only reflect a difference in the type of client served. Such data can be statistically different, yet be useless for meaningful program reform.

Secondly, Mr. District Supervisor and Mr. Counselor, don't be misled into believing that PE is only for the "Chiefs" and the "Higher-ups." The concepts presented here are as applicable to you as to them.

Supervisors can keep track of their units using the very same techniques proposed here. Additionally, counselors can monitor their own caseload

using exactly the same procedures. In fact, Mr. Supervisor, if every counselor kept a "running" list of these data, it would be a simple task to get district or unit figures that would be meaningful for local program reform.

So remember! PE is not discriminatory! It is everybody's business!

CHAPTER 7

DATA NOT CURRENTLY AVAILABLE

Lots of times, very meaningful questions pop up in VR operations to which there are no immediate answers because the data aren't available to help you.

The hardest evaluation problems are sometimes those for which current data are not available.

A primary problem in these kinds of studies is in precisely what you want to measure. For example, a perennial problem that faces rehabilitation is "Who are the best counselors"?

A most appropriate response to that question is "What do you mean by best"? The ones who get the most 26 closures? Maybe – maybe not. The ones who do the best counseling job? That's a real tough one. It requires that you define exactly what you want to check. Is it actual time spent with clients? Or could it be one of the many possible definitions of best, good, effective, etc.?

So, when you tread into this domain of evaluation, be prepared to encounter many problems that require techniques of a somewhat sophisticated nature. Maybe these kinds of endeavors could be postponed – at least until you feel more comfortable with the procedures outlined in Chapters 3 and 4.

Then again, maybe you could try! You be the judge!

The rest of this chapter will give you three examples of the types of evaluation that you could do that fall into this category.

1. Survey of percent of time counselors spend in various duties:

    a. Dictation, writing
    b. Reading
    c. Attending conferences
    d. Fiscal tasks
    e. Statistical tasks
    f. Travel
    g. Public relations
    h. Supervision
    i. Referrals

j. Determining eligibility
k. Counseling
l. Planning client services
m. Placement and follow-up

Then you'd know precisely what your counselors are doing, how they're spending their time. For example, it might come out that more time is spent filling out forms than in counseling or placement activities. Based on these data, you could then answer questions such as: Is this desirable? If not, what can be done to change it? Either way, you have data available allowing you to make decisions regarding the need for improvements.

2. Survey of counselor expertise; e.g., what kinds of clients do you prefer to work with? Use a rating form which asks counselors to rate client preferences by (a) disability, (b) socio-economic level, (c) sex, (d) referral source, etc.

You might find counselor preferences which would assist you in assigning caseloads. Maybe Counselor A prefers working with mental disabilities as opposed to physical disabilities. Chances are, the counselor prefers doing what he does best – and what better way to assign clients insofar as possible.

3. Follow-up survey of closed and terminated cases from a rehabilitation facility or special program. You could ask questions such as:

a. Had they worked?
b. How long had they worked?
c. Was the job in an area closely related to their training?
d. How much money did they make?
e. What are the client's perceptions of the worth of rehabilitation services provided?

The above are only suggestive. We're sure you could come up with four or five of your own. At any rate, try them – if you feel comfortable with them.

BUT REMEMBER!

Stick to evaluation areas that you feel competent to deal with and branch out as your skills branch out. Don't hesitate to discuss your study with resource people, especially your programmer. They'll tell you how you can best collect data.